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Notice of Allowability	Application No.	Applicant(s)	
	09/522,832	SAWAZAKI ET AL.	
	Examiner	Art Unit	
	B. William Baumeister	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to election filed 8/6/04.
2. ☒ The allowed claim(s) is/are 1,6-14,17-26,29 and 32-36.
3. ☐ The drawings filed on 10 March 2000 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>5/14/04</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|---|--|

DETAILED ACTION

Election/Restrictions

1. Claims 1 and 18 are generic and allowable. Accordingly, the restriction requirement as to the encompassed species is hereby withdrawn and claims 12, 13, 23 and 24, directed to the species of the blue emitter are no longer withdrawn from consideration since all of the claims to this species depend from or otherwise include each of the limitations of an allowed generic claim.

2. In view of the above noted withdrawal of the restriction requirement as to the linked species, applicant(s) are advised that if any claim(s) depending from or including all the limitations of the allowable generic linking claim(s) be presented in a continuation or divisional application, such claims may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Allowable Subject Matter

3. Claims 1, 6-14, 17-26, 29, and 32-36 are allowed.

4. The following is an examiner's statement of reasons for allowance:

- a. The use of tunneling barriers (or "clads") and caps in a III-N emitter adjacent the MQW active region was generally known (see e.g., Nakamura '307, FIG 5, elements 201 and 101, respectively).

b. It was known to employ a layer of InGaN above an underlying n-type contact layer for buffering an overlying III-N MQW active region (see e.g., Nakamura, "GaN-based Blue/Green Semiconductor Laser," IEEE, Journal of Selected Topics in Quantum Electronics, Vol. 4, No. 2, April 1997, pp. 435-442, at FIG 4; and Nakamura USP# 5,777,350, FIG 11, layer 155 and col. 19, lines 59-).

c. It was also conventional to form MQWs for III-N emitters composed specifically with InGaN wells and GaN barriers (see e.g., JP 273057, paragraph [0017]).

d. However, a search of the relevant art failed to disclose or reasonably suggest the respective layers (contact/InGaN intermediate/n-clad/MQW) formed in that order and in direct contact with each other, as set forth in the independent claims. For example, while Nakamura et al. '307 discloses n-contact 13; InGaN intermediate (or crack preventing) layer 30; n clad 14 and active region 16 (e.g., FIG 2), that embodiment also discloses the further inclusion of an interposed waveguide layer 15.

e. Regarding applicant's use of the phrase "a material *substantially* the same as the barrier," the examiner is persuaded that this recitation possesses reasonable objective clarity in light of applicant's acknowledgement in the REMARKs section that a 1% compositional change would NOT constitute being substantially the same (see e.g., page 8, 5th paragraph of response filed 5/25/04).

f. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. William Baumeister whose telephone number is (571) 272-1722. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


B. William Baumeister
Primary Examiner
Art Unit 2815
**BRADLEY BAUMEISTER
PRIMARY EXAMINER**

October 18, 2004